

**APPENDIX D**

**M-CACES COST ESTIMATES**



Tue 15 Nov 2005  
Eff. Date 10/01/05

U.S. Army Corps of Engineers  
PROJECT BDF602: Dade County Shore Protection - Bal Harbour  
MCACES/Recommended Plan

TIME 14:13:14  
TITLE PAGE 1

Dade County Shore Protection  
Bal Harbour  
Design Memorandum  
(Updated Pricing to FY06)

Designed By: CESAJ-EN-HC  
Estimated By: CESAJ-EN-C

Prepared By: T. Leeser  
Revised by B. Blake

Preparation Date: 11/15/05  
Effective Date of Pricing: 10/01/05

Sales Tax: 7.30%

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Release 5.30A

LABOR ID: NAT00A EQUIP ID: REG03C

Currency in DOLLARS

CREW ID: NAT00A UPB ID: UP01EA

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PROJECT NOTES

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Recommended Plan Estimate for Design Memorandum (Including Profit and Contingency)

Dade County Shore Protection Project, Bal Harbour

RE: Telephone request from T. Martin, EN-HC.

Borrow area information from Dade County Evaluation Report, Geotechnical Report prepared by CESAJ-EN-G, D. Rosen, dated 18 May 2001.

\* - CESAJ-EN-HC Email of 15 November 2005 requesting updated pricing to FY06 for the Recommended Plan MCACES. The previous Recommended Plan MCACES was project file "BDF499" with effective pricing date of 1 October 2004 (FY05).

Scope of Estimates (as per the above reference):

MCACES cost estimate on recommended plan, alternatives S3 and B1 from alternatives screening analysis. For B1, two borrow areas are being considered, and separate cost estimates are required for each borrow area.

Alternative Borrow Sources (As per the above referenced Geotechnical Report):

Deepwater borrow sites offshore Dade Co. - Results of the Coast of Florida Deep Water Geotechnical Investigation of Offshore Sand Deposits for Beach Renourishment in Dade County, Florida, dated September 2000, estimates 20,000,000 cubic yards of beach sand within the deep water sand sources. The dredging industry has expressed that these are dredgeable water depths, if the work were available. Equipment for dredging at these water depths (55 to 300 feet) is currently not available in the U.S. due to now work at these water depths.

Ebb Shoal at Bakers Haulover Inlet - The ebb tidal shoal is located in 15 to 20 feet of water northeast of Bakers Haulover Inlet.

Estimate Assumptions:

Alternative Borrow Sources (Taken from cost estimate prepared for borrow area evaluation report, Beach Erosion Control and Hurricane Protection Project, Evaluation Report, October 2001)

Deepwater borrow sites offshore Dade Co. -  
This will require the use of a large deep dredging hopper dredge which is not currently owned or operated by the U.S. dredging industry. The dredging industry has indicated an interest in obtaining the deep dredge capability if the work becomes available. The estimate is based on the acquisition of a new large deep dredging "MEGADREDGE", based on existing European Jumbo hopper dredge specifications. This would include much larger dredge pumps (twice the existing horsepower) and pump diameter due to the much deeper dredging requirements. The available months per year is assumed to be 5 months versus the normal 10 months due to the limited workload available to the deep working dredge.

Also, the hopper load capacity is reduced by 50 percent in the estimate in order to allow adequate draft clearance due to shallow depths over hardbottoms at the pumpout location.

Baker's Haulover Inlet Ebb Shoal - based on the shallower depths and shorter distance from the beach placement areas, the dredging and beach pumpout from the ebb shoal borrow site will be by pipeline dredge verses hopper dredge. The estimate is based on using a 24-inch cuttersuction pipeline dredge as this is the smallest sized pipeline dredge that would be USCG certified for offshore operations.

The hopper dredge and pumpout production is based on the past dredging contracts as reported to this office via the Daily Report of Operations - Hopper Dredge, Eng Form 27A. The pipeline dredge production is based on past dredging contracts at Bakers Haulover Inlet reported to this office via the Daily Report of Operations - Pipeline Dredge, Eng Form 4267.

Beach Tilling and Endangered Species Monitoring costs are included in all the above project alternatives.

Estimate Parameters:

1. Assumed 4 percent field O/H and 8 percent home office O/H on General Marine Contractor (GC).
2. Assumed 6.5 percent field O/H and 10 percent home office O/H on the Big Business Dredging Contractor (DC).
3. Assumed 10 percent profit on GC and DC.
4. Assumed 1.5 percent contractor bonds on GC and DC.
5. Used 25 percent contingency for S1-tuned groin field, B1-Dade deepwater borrow sites and B2-Baker's Haulover Ebb Shoal borrow site due to the limited amount of available design information for these project components.
6. The estimate is construction costs only and DOES NOT include Real Estate costs. PED and S&A are included at 8% and 10% of construction costs, per project engineer and are documented in the e-mail from T. Martin, EN-HC, to T. Leeser, EN-C, dated 8/30/04.

For alternative B1, both borrow areas, to create this estimate used BDF103 as a base, as well as CEDEP files DadeCoSPPSustainability0413.xls, BDF111hopperosborrows.xls, BDF0005bhi.xls and BDF105bhiebbshoal.xls. Also used IGE for Bal Harbour Renourishment DACW17-03-B-0005.

For alternative S1, tuned groin field, to create this estimate used models from IGEs for Palm Beach Harbor Jetty Work DACW17-03-B-006 and Peanut Island Restoration DACW17-02-R-0019.

Other sources of information include Means Heavy Construction Cost Data 2001 and quotes from materials suppliers.

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\* - Updated the MCACES costs for the Recommended Plan from FY05 to FY06 effective pricing level via escalation using the Civil Works Construction Cost Index System (CWCCIS), EM 1110-2-1304, Revision of 31 March 2005. Used the Yearly Cost Indexes listed in Table A-2 under CWBS Feature Code number 17, Beach Replenishment.

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No Detailed Estimate...

No Backup Reports...

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\*\* PROJECT OWNER SUMMARY - Contract (Rounded to 1000's) \*\*

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	CONTRACT	CONTINGN	ESCALATN	TOTAL COST
97 S3-Tuned groin field	2,136,000	534,000	54,000	2,724,000
98 B1-Offshore Deepwater Borrow	5,648,000	1,412,000	142,000	7,201,000
99 B1-Baker's Haulover Ebb Shoal	4,917,000	1,229,000	123,000	6,270,000

LABOR ID: NAT00A EQUIP ID: REG03C

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	CONTRACT	CONTINGN	ESCALATN	TOTAL COST
97 S3-Tuned groin field				
97: 01 Construction costs				
97: 01/10 Breakwaters & seawalls				
97: 01/10.00 Breakwaters & seawalls				
97: 01/10.00.01 Mob, demob & prep work	108,000	27,000	3,000	137,000
97: 01/10.00.46 Tuned groins	1,702,000	426,000	43,000	2,170,000
TOTAL Breakwaters & seawalls	1,810,000	452,000	45,000	2,308,000
TOTAL Breakwaters & seawalls	1,810,000	452,000	45,000	2,308,000
TOTAL Construction costs	1,810,000	452,000	45,000	2,308,000
97: 02 Non-construction costs				
97: 02/01 Lands & damages				
97: 02/01.23 Construction contract documents				
97: 02/30 Planning, engineering & design				
97: 02/30.23 Construction contract documents	145,000	36,000	4,000	185,000
TOTAL Planning, engineering & design	145,000	36,000	4,000	185,000
97: 02/31 Supervision & administration				
97: 02/31.23 Construction contract documents	181,000	45,000	5,000	231,000
TOTAL Supervision & administration	181,000	45,000	5,000	231,000
TOTAL Non-construction costs	326,000	82,000	8,000	416,000
TOTAL S3-Tuned groin field	2,136,000	534,000	54,000	2,724,000
98 B1-Offshore Deepwater Borrow				
98: 01 Construction costs				
98: 01/17 Beach replenishment				
98: 01/17.00 Beach replenishment				
98: 01/17.00.01 Mob, demob & preparatory work	1,336,000	334,000	34,000	1,703,000

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	CONTRACT	CONTINGN	ESCALATN	TOTAL COST
98: 01/17.00.17 Hopper dredging	3,290,000	823,000	83,000	4,195,000
98: 01/17.00.70 Beach fill	120,000	30,000	3,000	153,000
98: 01/17.00.99 Associated general items	40,000	10,000	1,000	51,000
TOTAL Beach replenishment	4,786,000	1,196,000	120,000	6,102,000
TOTAL Beach replenishment	4,786,000	1,196,000	120,000	6,102,000
TOTAL Construction costs	4,786,000	1,196,000	120,000	6,102,000
98: 02 Non-construction costs				
98: 02/01 Lands and damages				
98: 02/01.23 Construction contract documents				
98: 02/30 Planning, Engineering & Design				
98: 02/30.23 Construction contract documents	383,000	96,000	10,000	488,000
TOTAL Planning, Engineering & Design	383,000	96,000	10,000	488,000
98: 02/31 Supervision and administration				
98: 02/31.23 Construction contract documents	479,000	120,000	12,000	611,000
TOTAL Supervision and administration	479,000	120,000	12,000	611,000
TOTAL Non-construction costs	862,000	216,000	22,000	1,099,000
TOTAL Bl-Offshore Deepwater Borrow	5,648,000	1,412,000	142,000	7,201,000
99 Bl-Baker's Haulover Ebb Shoal				
99: 01 Construction Costs				
99: 01/17 Beach Replenishment				
99: 01/17.00 Beach Replenishment				
99: 01/17.00.01 Mob, Demob & Prep Work	713,000	178,000	18,000	910,000
99: 01/17.00.16 Pipeline Dredging	2,675,000	669,000	67,000	3,411,000
99: 01/17.00.70 Beach Fill	723,000	181,000	18,000	922,000
99: 01/17.00.99 Associated General Items	56,000	14,000	1,000	72,000
TOTAL Beach Replenishment	4,167,000	1,042,000	105,000	5,313,000
TOTAL Beach Replenishment	4,167,000	1,042,000	105,000	5,313,000

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	CONTRACT	CONTINGN	ESCALATN	TOTAL COST
TOTAL Construction Costs	4,167,000	1,042,000	105,000	5,313,000
99: 02 Non-construction costs				
99: 02/01 Lands and damages				
99: 02/01.23 Construction contract documents				
99: 02/30 Planning, Engineering & Design				
99: 02/30.23 Construction contract documents	333,000	83,000	8,000	425,000
TOTAL Planning, Engineering & Design	333,000	83,000	8,000	425,000
99: 02/31 Supervision and administration				
99: 02/31.23 Construction contract documents	417,000	104,000	10,000	532,000
TOTAL Supervision and administration	417,000	104,000	10,000	532,000
TOTAL Non-construction costs	750,000	188,000	19,000	956,000
TOTAL B1-Baker's Haulover Ebb Shoal	4,917,000	1,229,000	123,000	6,270,000

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ERROR REPORT

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No errors detected...

\* \* \* END OF ERROR REPORT \* \* \*

LABOR ID: NAT00A EQUIP ID: REG03C

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